

REMARKS

The Applicants request reconsideration of the final rejection mailed July 14, 2005.

The Applicants have canceled rejected Claims 2-7, 9-19, and 23-25, without prejudice or disclaimer, in favor of new Claims 26-31 as set forth above. The Applicants respectfully submit that the rejected claims contained patentable distinctions from the prior art as asserted against them in the final rejection. However, the new claims have been substituted for the rejected claims in order to more clearly and distinctly characterize certain patentable features of the invention, as discussed more fully below.

As set forth in new method Claim 26, the presently-claimed invention is characterized by a step of determining whether a combination of a first I/O port and a packet transmission source address contained in a header of a packet received at the first I/O port coincides with a combination of an I/O port and a transmission source address registered in advance with a correspondence therebetween. The method invention is further characterized by a step of transferring the received packet when a coincidence is determined to exist between the two combinations. On the other hand, transfer of the packet is limited, and a request for user authentication

is transmitted to the source terminal sending the packet, when there is determined to be no coincidence between the I/O port and received packet transmission source address and any previously-registered combination.

Upon receiving user authentication information from the source terminal in response to the request for user authentication, the method includes a step of executing user authentication based on the user authentication information thus received and based on the packet transmission source address contained in the header of the packet. When the user is authenticated, the method registers the first I/O port at which the packet is received with a correspondence to the packet transmission source address contained in the header of the packet received at the first I/O port. Accordingly, the packet thus received is transferred.

Apparatus Claim 29 recites a plurality of I/O ports coupled to a plurality of terminals, respectively; a communication portion for transmitting and receiving data via the plurality of I/O ports; a relay portion which determines a transmitting port from which a packet received via a receiving port is transferred under specified conditions; and an authentication portion which registers a receiving I/O port at which a packet is received and a packet transmission source

address contained in the packet with a correspondence therebetween under specified conditions.

More particularly, the relay portion determines an transmitting I/O port, determines whether a combination of a receiving I/O port and a packet transmission source address contained in a packet received at the receiving I/O port coincides with a combination registered in advance, and then transfers the received packet from the transmitting I/O port when a coincidence is determined. When no coincidence is determined, the relay portion requests user authentication to the source terminal of the received packet. The authentication portion registers the receiving I/O port at which the packet is received with a correspondence to the packet transmission source address of the received packet when completing user authentication based on user authentication information sent from the source terminal in response to the request for user authentication.

In finally rejecting the now-canceled claims, the Examiner indicated that the primary reference to Jain et al., U.S. 6,311,218 (Jain) discloses a packet relaying means that operates to learn whether there is correspondence between an I/O port which has received a packet and a source network address identified in the packet on the basis of the source

network address contained in the packet, citing Column 5, "Authenticating a Port" and Column 6, "Controlling Access to the Network."

In these passages, however, Jain discloses that an authentication process 89 invoked by a controller 82 causes a message to be sent to an unauthenticated end system requesting an identification such as a user id. According to Column 4, line 49 through Column 5, line 18, an authentication is required each time there is any interruption in the physical link with an end system connected to a particular network port. To determine whether authentication is required, Jain uses a mechanism at the physical layer to determine whether the end system is newly connected to the port, rebooted, or power cycled at the port.

In a specific embodiment, point-to-point ethernet linkbeat is used to determine whether there has been any physical interruption to the end system. Thus, the controller is enabled to respond to the interruption in the linkbeat on the port by resetting an authentication bit in a port table 85. The resumption of linkbeat on the port, or an attempt to send data on the port that is authenticated, will be detected by controller 82 and cause the controller to initiate the authentication process 89.

The Applicants note that Jain states that other mechanisms for detecting the interruption in the physical connection may be used, and indeed that any mechanism for a particular physical interface that can sense a disconnection from the physical interface or a reboot of the end system connected to the physical interface may be used with the authentication scheme. However, each disclosure of Jain, and each suggestion contained within the Jain patent for modifying the basic disclosure, requires authentication upon detecting an interruption, disconnection, or reboot as discussed above. Jain neither discloses nor suggests any correspondence between an I/O port that has received a packet and the source network address identified in the packet, or that a packet relay means operates to learn about any such correspondence.

Therefore, Jain neither discloses nor suggests to act in accordance with the detection of any such correspondence, or in accordance with the determination that such a correspondence does not, in fact, exist. As a result, Jain cannot be said to change the content of stored correspondence information or cause a received packet to be relayed upon authentication based on a correspondence between the I/O port and the source network address.

In terms of new claim 26, Jain neither discloses nor suggests a step of determining whether a combination of a first I/O port and a packet transmission source address coincides with a combination of an I/O port and a transmission source address that have been registered in advance with a correspondence therebetween. Jain further does not disclose or suggest a step of transferring the received packet via a second I/O port when the determining step results in a determination that the combination of the first I/O port and the packet transmission source address coincides with a combination of an I/O port and transmission source address that have been registered in advance with a correspondence therebetween, while limiting transfer of the packet and transmitting a request for user authentication of a user to the source terminal when no coincidence is determined. Jain also does not disclose or suggest a step of executing user authentication of the user based on user authentication information and a packet transmission source address contained in the header of the packet, or a step of registering the first I/O port with a correspondence to the packet transmission source address when the user is authenticated.

In terms of new Claim 29, Jain does not disclose or suggest a relay portion which determines whether a combination

of the receiving I/O port and a packet transmission source address contained in the received packet coincides with a combination of an I/O port and a transmission source address registered in advance, and which transfers the received packet from a transmitting I/O port when a coincidence is determined, while requesting user authentication to the source terminal when no coincidence is determined. Jain further does not disclose or suggest an authentication portion which registers the receiving I/O port with a correspondence to the packet transmission source address when completing user authentication based on user authentication information sent from the source terminal.

The Applicants recognize that certain of the claims were rejected over the combination of Jain in view of Guthrie et al., U.S. 6,161,185 (Guthrie). While Guthrie is discussed more fully below, the Applicants further note that the combination rejection in the final office action relied on Jain for the features distinguished above. Therefore, whereas the final rejection only noted the Applicants' distinguishing arguments regarding Guthrie, and did not consider the Applicants' distinguishing arguments regarding Jain (final rejection at Page 6, Item 6), the Applicants request full consideration of each of the foregoing arguments in

conjunction with the following arguments distinguishing Guthrie.

In the final rejection, Guthrie is applied as teaching a step of sending an e-mail message to certain entities when authentication fails. Guthrie is applied in combination with the teachings of Jain. Like Jain, Guthrie does not teach any relation or correspondence established between an I/O port at which a packet is received and a packet transmission source address from which the packet is received at the I/O port. Further, Guthrie does not teach or suggest any reliance on such a determination, and particularly does not teach or suggest that the transfer of the received packet is made based on a determination of whether a coincidence exists between a corresponding I/O port and transmission source address. Guthrie also does not request user authentication information when such a coincidence is determined not to exist, and does not register a correspondence between the receiving I/O port and the packet transmission source address when user authentication is completed.

Because neither Jain nor Guthrie discloses these features of the invention, it necessarily follows that the combination of Jain and Guthrie does not teach these features of the invention.

In addition, as also previously noted, the secondary reference to Malkin et al., "Portable Node Support Using Mobile IP Protocol" (Malkin), applied in rejecting Claim 7, is only applied as teaching the use of mobile IP protocols, and neither teaches nor suggests the features of the invention lacking from Jain and Guthrie as discussed above. Therefore, Malkin does not contribute to a case of prima facie obviousness of any of the new claims.

In view of the foregoing new claims and remarks, the Applicants request reconsideration of the rejection and allowance of the claims.

Respectfully submitted,


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